

Getting a Grip on Greenbugs

In some years, the key insect pests in winter wheat—tiny, light-green aphids known as greenbugs, *Schizaphis graminum*—cost Southern and Central Plains growers more than \$100 million. But now wheat growers have access to new informational aids that may help them keep greenbugs in check. One is a website called the “Greenbug Management Decision Support Tool,” which was developed in cooperation with Oklahoma State University and a private firm. It can be accessed at www.ento.okstate.edu/gbweb.

This website provides help in identifying aphids and gives information about their natural enemies and registered insecticides. It also features an “economic threshold calculator” that helps growers determine how many greenbugs can infest a field before causing economic losses.

Easy-to-carry “Glance-and-Go” forms include a simplified version of the calculator that gives growers a quick, easy way to estimate greenbug infestation and make decisions about whether and when to apply pesticides. *Norman C. Elliott, USDA-ARS Wheat, Peanut, and Other Field Crops Research Unit, Stillwater, Oklahoma; phone (405) 624-4141, ext. 227, e-mail norman.elliott@ars.usda.gov.*

Propane To Power Farm Operations

More than half of U.S. farms use propane gas—mainly for winter heating, as fuel for tractors, and in crop drying and nonchemical pest control. One advantage over gasoline or diesel is that it causes less air pollution. Now a memorandum of understanding with the Propane Education and Research Council could lead to new, expanded uses for this alternative fuel.

Propane’s already being used to fuel a thermal plant defoliator that removes

leaves from chili pepper and cotton plants in preparation for harvest. To see the technique in use on the World Wide Web, go to <http://web.nmsu.edu/~pfunk/DEF.html>.

There’s immediate interest on the part of organic farmers in exploring propane’s use in steam-based heat treatments to control insect pests in stored fruits, vegetables, grain, and cotton. It could also fuel electricity generators and irrigation pumps as well as incinerate farm wastes. *Paul A. Funk, USDA-ARS Southwestern Cotton Ginning Research Laboratory, Mesilla Park, New Mexico; phone (505) 526-6381, e-mail pfunk@nmsu.edu.*

High-Tech Snooping on Stored Food Pests

To keep insects away from stored products such as grains and cereals, nuts, dried fruits, and botanicals, the managers of food processing plants, warehouses, and retail stores usually rely on chemical insecticides and fumigants. Pest-control operators who apply these treatments typically focus on finding out when and where pests are likely to be found—which isn’t as easy as it sounds.

Now, through a collaborative effort between ARS scientists and Orkin Commercial Division in Atlanta, Georgia, a new monitoring method has been developed. It uses a combination of trapping and spatial analysis to locate the moths and beetles, and their larvae, that can contaminate and damage stored food products.

Spatial analysis procedures show the relationship between the number of insects trapped in a specific time period and their proximity to the infestation source. The data collected are entered into a computer that can construct contour maps that flag insect population centers needing treatment. The maps document pest number and movement and also demonstrate the effectiveness of control tactics to maintenance, sanitation, and pest-control personnel. *Richard T. Arbogast,*

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Stored Grains Are Singing

Each year, more than \$1.5 billion worth of U.S. wheat and other grains must be downgraded or discarded because of post-harvest damage by insect pests. Despite preventive measures, insects such as rice weevils and lesser grain borers still manage to find their way into grain storage facilities.

Now an acoustics-based grain sorter has been devised that can distinguish between “clean” wheat kernels and those that have been tunneled through and spoiled by hungry insects. It relies on a special microphone that can pick up ultrasonic sounds at exceptionally high frequencies. Not only can the sorter pinpoint kernels with tiny insect larvae hiding inside, it can also shunt the insect-damaged kernels into a separate bin.

With the sorter, researchers can check a 100-gram grain sample in 75 seconds—instead of the more than 20 minutes it takes to do a visual check—and they’ve achieved an 87-percent detection rate in tests. A private-sector partner is being sought to bring the technology to market. *Tom C. Pearson, USDA-ARS Grain Marketing and Production Research Center, Manhattan, Kansas; phone (785) 776-2729, e-mail tom.pearson@gmprc.ksu.edu.*

